

## JUNE ACTIVITY REPORT JULY 1 MEETING MINUTES

### **Project Engineering**

See the attached sheet (second to last page).

### **Geology** - Foundation & Drilling, mapping, etc. Notes

We have completed drilling at Sites Damsite. We drilled a total of four diamond core holes and three auger holes. As expected, foundation rocks intersected by the core holes generally looked good. Two faults and a number of shear zones were intersected. Water pressure testing of the core holes show low to medium water "takes." Overall, our preliminary assessment is that the foundation rocks are adequate for the proposed structure and that foundation leakage will not be a problem.

We are completing the first channel hole at Golden Gate Damsite this week. Two more diamond core and three auger channel holes are planned. Sutter Yard is repairing an access road damaged by heavy rains and streamflow this winter. Access to the two planned abutment holes is on hold pending environmental clearance.

The fault investigation, Phase I, is nearly complete. Phase I consists of literature review, compiling earthquake activity, and determining the design earthquake. Phase II, consisting of trenching across faults, will begin later this summer.

Samples sent to the laboratory indicate that the construction materials are in adequate quality and quantity for the proposed structure.

### **Water Quality**

Monthly water quality sampling continues. Although several parameters have been found above water quality goals in several tributaries, water quality has not been calculated for the proposed reservoirs. This will be done by using historical flow data for the tributaries and estimated inflow from other sources (Tehama-Colusa Canal, etc.).

### **Cultural Resources**

All record searches for previously recorded sites have been completed for storage alternatives and conveyance facilities.

Except for 1-2 more survey days in October (when Cottonwood Creek is fordable), work on the archaeological site survey at Dippingvat, Lanyan, and Bluedoor is finished. We anticipate work at Schoenfield will be completed sometime in August-September.

(The Amendment to the Interagency Agreement and the Task Order with DPR should be signed off by August. This will give us 2-3 additional crew.)

The survey effort will then shift to the Sites and Colusa projects. Survey fieldwork will continue to completion through the winter months. Work on the memo progress report to Naser will start in early August and will be ready by August 31. We

Next work comm. start by January

expect to have all field surveys and the first draft of the final report completed by late February.

**Wetlands**

*updated 7/23/93*

All preliminary wetland delineations for the Thomes-Newville and Sites-Colusa Reservoir Sites have been completed. The data sheets for these sites are currently being finalized. The final wetland maps are more than 75% completed for Thomes-Newville and about 30% completed for Sites-Colusa. Wetland delineations for the wetlands within the Red Bank Project will be completed by mid-July. Field measurements of all "Waters of the US" which do not contain wetland areas should be completed by July 2. I will meet with Brad Hubbard on July 23 to discuss the status of our studies (Brad is the Army Corps of Engineers regulatory staff person for Colusa, Tehama and Glenn Counties). We are attempting to have all acreage calculations completed by July 31.

**Sensitive Vegetation**

*through September field studies complete  
300 sq ft has been sampled for plants*

Rare plant surveys and botanical inventory have covered approximately eighty percent of the Sites-Colusa and Thomes Newville reservoirs. Approximately sixty percent of the Red Bank sites have been surveyed. Seasonal surveys are finished for thirty of the sixty-two rare or watch-list plant species with potential for occurring in the project areas. The rare plant surveys for the remaining thirty-two species will continue through the end of September to encompass the blooming and identification periods for these species. Numerous new populations of the following plant species have been identified within the reservoirs;

Antirrhinum subcordatum	Di-morphic Snapdragon	List 1B
Astragalus rattanii var. jepsonianus	Jepson's milkvetch	List 1B
Fritillaria pluriflora	Adobe lily	List 1B
Hesperolinon tehemense	Tehama County western flax	List 1B
Navarettia eriocephala	Hoary navarettia	List 4
Navarettia heterandra	Tehama navarettia	List 4

Vegetation/plant community data is currently being entered into GIS format. Vegetation community types have been field proofed for Sites-Colusa and Thomes-Newville reservoirs. Red Bank vegetation community field proofing is in progress. Upon completion of the field proofing the data will all be entered into the database to provide reservoir acreage summaries of the plant communities impacted by inundation.

**Invertebrates**

*revised protocol arranged  
to a final one done.*

The reconnaissance level assessment of potential habitat area for listed vernal pool invertebrate species at the four off-stream storage sites is complete and the final report has been submitted.

No significant habitat is present at the Red Bank location. Approximately 26 acres of potential habitat were mapped at the Thomes-Newville site, 12 acres at the Colusa project, and 73 acres at the Sites reservoir location (85 acres for the combined Sites/Colusa project).

The highest quality, non-degraded contiguous potential habitat is located at the Thomes-Newville area. A greater amount of habitat occurs at the Sites location, but this area has been more severely impacted by land use and erosion patterns.

The study has concluded that, based strictly upon total available habitat acreage, the Sites project will have the greatest impact of the four alternatives.

### ***Wildlife (Mammals)***

DFG is currently in the process of conducting small mammal trapping using Sherman ® live traps (for the capture and identification of rodent species such as the Marysville California kangaroo rat and the San Joaquin pocket mouse); bat trapping using mist nets (for the capture and identification of bats); echolocation surveys using an Anabat II, Zero-Crossing Analysis Interface Module, and a laptop computer; and limited spotlight surveys to detect species such as the American badger. These are the four primary survey methods currently being used by DFG staff to collect data on special status species. All other incidental sightings while conducting surveys will also be recorded and included in the September 1998 report.

Efforts are occurring one week per month for each of the four proposed reservoir sites. Other work efforts are research and discussion with the U.S. Fish and Wildlife Service to get agency backing to revise the initial list submitted to Mr. Naser Bateni. All field efforts will continue through April or May of 1999.

### ***Wildlife (Raptors)***

See the attached sheet (last page).

### ***Wildlife (Elderberries)***

Surveys and mapping of elderberries continued during the month of June. Work was begun on Thomes/Newville Reservoir and continued at Dippingvat. Elderberry bushes are present at all reservoir sites. However, only one plant has been mapped at Colusa Reservoir with 90% of the area surveyed. Emergent holes are present on some plants at Sites but in low numbers. The percentage of area covered for each reservoir is listed below. Field work should conclude in August.

Sites	90% surveyed
Colusa	90% surveyed
Thomes	70% surveyed
Red Bank	25% surveyed

### ***Amphibians & Reptiles (T&E)***

Amphibian and reptile surveys will continue at Sites-Colusa and Red Bank. No red-legged frog was seen at Sites-Colusa, but one partially transformed juvenile

Angela Dossittle  
9:30 am 10 people

red-legged frog was seen at Red Bank. A few Pacific pond turtles have been seen at Sites-Colusa this spring. In contrast, observers have seen Pacific pond turtles nearly every day they survey at Red Bank. No foothill yellow-legged frog has been seen at Sites-Colusa, but they are abundant at Red Bank. No western spadefoot toad or horned lizard has been seen. Field surveys will continue through June 1999 to satisfy USFWS protocols.

*note: the reservoirs according to amphibian habitat.*

### **Fish**

Streamflow at Sites-Colusa and Red Bank is still too high for fish sampling. At this time, we estimate that sampling will begin on Sites-Colusa about mid-July. The South Fork of Cottonwood Creek and Thomes Creek are too high for diving surveys for Spring-run Chinook salmon. Spring-run surveys begin in August.

### **Sacramento River Conveyance Engineering**

The list of conveyance alternatives was finalized in June after meeting with staff from Northern District. A total of 16 alternatives will be presented in a matrix format that will display the components of the alternatives including diversion facilities, canal reaches, and pumping plants.

Staff continues to refine the design and cost of the components and meet with DOE staff to review the cost analysis for the different pumping plants. CD staff will incorporate the cost of the pumping plants and diversion/fish screen facilities into the alternatives when DOE and ESO complete them, respectively. Staff prepared a draft outline of the memo report and documentation that will be completed by August 31.

### **Sacramento River Fisheries**

ESO staff conducted reconnaissance surveys of the Colusa Basin Drain to determine the likelihood of the need to screen a diversion from the Colusa Basin Drain. The goals were to determine 1) whether there is hydraulic continuity between the Sacramento River and the Colusa Basin Drain for fish migrating upstream and 2) whether there is suitable habitat for sensitive fish species upstream. We surveyed from the Yolo Bypass to Knights Landing Ridge Cut to the Colusa Basin Drain and found that fish would be able to migrate upstream to the Drain. The Colusa Basin Drain gets its water from tributaries that flow into them, some of which are spring-fed, from the Glenn-Colusa Irrigation District Canal directly through outlets into channels that lead to the Drain and from return flow from agriculture and the wildlife refuges. Chinook salmon have been seen over the years in the upper Colusa Basin Drain and tributaries. Future investigations should include some sampling for adult and juvenile chinook salmon in the upper reaches and splittail in the lower reaches.

ESO staff continues to contact DFG, USFWS, and Reclamation District staff about the occurrence and origin of Chinook salmon in the Colusa-Basin Drain and its tributaries. DFG has documented 140 unscreened diversions occurring from Knight's Landing to Red Bluff. Many of these fall within the stretch of the Colusa-Basin Drain. DFG staff indicated that these diversions regularly pull young chinook salmon out of the Sacramento River and these fish can end up in the Drain. Consequently, DFG-IFD

recommended proposing a screen for any diversion within the Colusa-Basin Drain. Adults found within the Colusa-Basin Drain could be strays from the Sacramento River or returning adults for a self-sustaining run.

ESO staff visited the PCGID/PID screen construction site and finished conceptual drawings using this type of screen for the on-river part of the potential Sacramento River diversion site at Moulton Weir or Chico Landing. Staff visited the potential diversion site at the Moulton Weir on the Sacramento River. Staff met with Art Bullock (TCCA) concerning the Red Bluff diversion site and discussed the possibility of a new screen at this location.

Water Supply Evaluations Section

Offstream Storage Projects

June 1998 Progress Report

(Supplement to Initial May Report)

This progress report is organized by the items shown on the November 1997 "Draft Offstream Storage Evaluation Schedule" as being the responsibility of Doug Denton.

#8 - Review of Past Studies - Although this item is mostly completed we continue to consult past reports and backup material mainly on the Thomes-Newville and Red Bank projects.

#9 - Basic Data Collection - Largely completed although photos and maps are still being taken or drawn.

#10 - Hydrology Analysis - A draft hydrology report was distributed in April and modifications have been made during June. At a June meeting with the Modeling Support Branch initial agreement was reached on how limited project operation studies would be run by them.

#11 - Flood Control - Most of the Offstream Storage Projects will create some flood control benefits which will be qualified in later phases of study.

#12 and 17 Initial and Pre-Feasibility Project Formulation - The initial project formulation oriented at determining alternative project sizes and physic features is completed. Prefeasibility level continuation of this work is approximately 15 percent completed.

#15 Operation Studies - The Sacramento Modeling Support Branch recently agreed to run approximately 12 statewide operation studies of the Sites, Colusa and Thomes-Newville projects in cooperation with us and CALFED. This work is approximately 10 percent completed.

#16 Energy (pumping/generating plants) Analysis and Design - We have contracted with Division of Engineering to perform most of this work. They recently began designing and costing out numerous alternative conveyance system pumping plants. They will begin work on the Sites/Colusa Pumping Plants in August. Their work is approximately 10 percent complete. *to be conducted on attached sites Colusa, Thomes*

#18 through 22 - are small items which focus on review of our Design, Engineering Cost Estimation and Report Preparation work by DOE. They have not started this review work yet. Overall, we are meeting the original schedule. Work on almost all of the above items will continue throughout the summer with near future emphasis on preparation of the September interim report to CALFED.

*Subic - hydrology cost estimates*

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State and federally "listed" avian species observed at the CALFED Off-Stream Storage Reservoirs							
Species	Status	Funks	*Thomes	Sites	Colusa	Red Bank	Dippingvat
American bittern	MNBMC	X					
American white pelican	CSSC	X					
<b>bald eagle</b>	<b>SE, FT</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>
<b>bank swallow</b>	<b>ST</b>		<b>X</b>				
Barrow's goldeneye	CSSC			?			
burrowing owl	CSSC, MNBMC	X	X	X	X		
California gull	CSSC	X	X	X			
California horned lark	CSSC, MNBMC		X	X	X	X	X
common loon	CSSC, MNBMC	X					
Cooper's hawk	CSSC		X			X	X
double-crested cormorant	CSSC	X	X				
ferruginous hawk	CSSC, MNBMC	X					
golden eagle	CSSC	X	X	X	X	X	X
grasshopper sparrow	MNBMC	X			X		
hermit warbler	MNBMC		X				
Lawrence's goldfinch	MNBMC	X				X	X
loggerhead shrike	CSSC, MNBMC	X	X	X	X		
long-billed curlew	CSSC, MNBMC	X	X	X	X		
long-eared owl	CSSC		X				
merlin	CSSC		X				
mountain plover	CSSC, MNBMC		X				
northern harrier	CSSC	X	X	X	X	X	
osprey	CSSC		X				
prairie falcon	CSSC	X	X	X	X		
<b>sandhill crane</b>	<b>ST</b>				<b>X</b>		
sharp-shinned hawk	CSSC		X	X	X	X	X
<b>Swainson's hawk</b>	<b>ST</b>		<b>X</b>				
tricolored blackbird	CSSC, MNBMC		X	X	X		
Vaux's swift	CSSC, MNBMC		X				
white-tailed kite	MNBMC	X	X				
<b>willow flycatcher</b>	<b>SE</b>		<b>X</b>				
yellow-breasted chat	CSSC		X				
yellow warbler	CSSC		X	X			
<b>Within Species Range Not Detected</b>							
Barrow's goldeneye	CSSC						
northern goshawk	CSSC, MNBMC						
<b>northern spotted owl</b>	<b>FE, SE</b>						
<b>peregrine falcon</b>	<b>SE, FE</b>						
short-eared owl	CSSC, MNBMC						
western snowy plover	CSSC, MNBMC						
<b>western yellow-billed cuckoo</b>	<b>SE, MNBMC</b>						
white-faced ibis	CSSC, MNBMC						
<b>KEY</b>							
CSSC=California Species of Special Concern							
MNBMC=Migratory Nongame Birds of Management Concern (USF&WS)							
SE=State Endangered							
ST=State Threatened							
FE=Federal Endangered							
FT=Federal Threatened							
?=Unconfirmed report							
<b>*Note Thomes Reservoir observations per DFG 1980s surveys</b>							